

Seminar and Workshop
The PETRA III Swedish Materials Science Beamline
– Achievements and Outlook for PETRA IV

DESY, Hamburg, Germany

9–10 September 2026

This lunch-to-lunch seminar brings together the Swedish materials science community, the Swedish beamline staff and people engaged in the PETRA IV project.

The purpose is to jointly assess the needs of the Swedish research community with regards the future capabilities of the PETRA III and possible PETRA IV Swedish Materials Science beamline.

The programme will start with a seminar that presents the current state-of-the-art capabilities of the beamline and also gives an overview of scientific achievements in several application areas.

The range of science cases and research and innovation opportunities will then be extended in an open interactive workshop.

We will then address the latest design plans for PETRA IV. People engaged in the project will inform our workshop of the plans. Then, in a moderated discussions, we will hear the lessons learned from upgrading other facilities as well as revisit the Swedish community's Science Cases as well as Methods/Instrument needs at a potential PETRA IV Swedish Materials Science beamline. The workshop will then jointly consider the way forward for developing the Swedish research community's roadmap for high energy synchrotron research and innovation.

In addition to workshop activities, participants will also have the opportunity to mingle over lunches, coffee and an evening meal.

Workshop Programme

9 September 2026

12:00 Arrival and lunch mingle

13:00 Welcome and introduction. DESY and CeXS

PART 1. THE PETRA III SWEDISH MATERIALS SCIENCE BEAMLINE AND SCIENCE CASES

Session 1. Taking stock

13:15 Overview of the beamline instrumentation and applications.
Ulrich

13:45 Overview of the computing status. Niels

14:00 *Taking stock of research developments over time in key design areas for the Swedish Beamline.*

Catalysis. Johan Gustafson (Lund)

Metals. Magnus Colliander (Chalmers)

14:50 Coffee

15:10 Taking stock continued

Tools. Lina Rogström (Linköping)

Corrosion. Edvin Lundgren (Lund)

16:00. Coffee

Session 2. Extending science opportunities.

Interactive workshop with posters/pitches. All user groups in Sweden are invited to participate. Representation includes, but is not limited to:

- PVD chamber, Cutting, Laser, Ebeam and other sample environments
- Universities, institutes, intermediaries, companies

18:00 Wrap up for the day

19:30 Dinner

10 September 2026

09:00

PART 2. LOOKING FORWARD TO PETRA IV

Session 3. The PETRA IV Project, novel instruments and service concepts

Status, science cases, software and other developments for the PETRA IV Project. Olivier Seeck, Kai Bagschik, Anton Barty and Arka Bikash Dey

10:15 Coffee to 10:45

Session 4. Workshop

- Workshop introduction. P Hedström (KTH)
- Learnings from our upgrades tbc
- Developing research tbc

Moderated discussion sessions, with questions such as:

- What are the future science cases?
- What are the future requirements on methods (analytical performance)

11:45 Joint discussion and conclusion session on way forward

12:30 Close and departure for lunch/airport

Further information

For further information, feel free to contact

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This seminar is jointly organised by CeXS and DESY.

